# ICTS Seminar

Title : An Entropy current on the large D membrane for Einstein Gauss-Bonnet theory

Speaker : Yogesh Dandekar (ICTS-TIFR, Bangalore)

Date : Thursday, October 17, 2019

Time : 4:00 PM

Venue : Emmy Noether Seminar Room

Abstract : We implement the membrane paradigm for the dynamics of black holes of Einstein Gauss-Bonnet theory in the large number of spacetime dimensions D. Specifically, we implement the large D perturbation theory to first subleading order in 1/D and non-perturbatively in the coefficient of Gauss-Bonnet term. We further extend it to second subleading order in 1/D and to linear order in the coefficient of Gauss-Bonnet term. We find a membrane entropy current at second subleading order in 1/D. This entropy current satisfies the local form of the second law of thermodynamics at large D. In the equilibrium case, the entropy current reproduces Wald entropy answer at large D. We also find a stress tensor for the membrane and also derive the equation for the shape of the stationary solutions.